

FENCING MEET AT GYM SATURDAY

Technology, Harvard, Yale—Preliminaries for Final Meet

GOOD CHANCE TO WIN

Grubnau 1909, Knox 1910, Loring 1910 Compose Institute Team as Usual

Fencing teams from Technology, Yale and Harvard will meet next Saturday night in the preliminaries of the Intercollegiate Fencing Championship in the Tech Gym on Garrison Street.

The two teams which win the largest number of bouts will be eligible for the Intercollegiate finals, which will be held in New York on March 27th. Cornell, West Point and Technology are sure to make a strong bid for the collegiate championship this year.

According to past performances the Institute team should have things its own way on Saturday, having won all its meets this season, defeating such teams as Pennsylvania, 6-3; Amherst, 5-0; Boston Y. M. C. A. and Fenway Fencing Club. The team is composed of Captain V. C. Grubnau 1909, H. C. Knox 1910, and E. M. Loring 1910, and should make a strong bid for the Intercollegiate Championship. Knox has won all but one bout this season, losing by one point to Captain Wendell, the crack Pennsylvania left hander. Both Pennsylvania and Annapolis beat Columbia 5-4, while the Institute team won seven bouts from the blue and white. Yale lost to Columbia 6-3, which would make the New Haven team's chances of winning the semi-finals to be very poor. The real race will be the contest with the crimson for the second place. The Eli team made up of Captain B. H. Smith 1909, Z. C. Rose 1911, and J. W. Sanders 1911, was defeated 6-3 by both Penn and the Army. They defeated Annapolis 6-3.

Last Saturday Harvard lost to West Point, 7-2. Solberg of the Cadet team winning all his bouts. Erhart and Barrell scored for the Crimson, the former winning his bout only after two extra periods had been fought. The Harvard team will be made up of Cutting, Darrell and Erhart.

MECH. ENGINEERING

Investigations in Lab.—Additions to Faculty and Equipment

Through the kindness of the Schutte & Koerting Co., of Philadelphia, the Institute has received a centrifugal spray nozzle of the type used for re-cooling water. In many localities where power plants must be erected the supply of water available for condensing steam is not sufficient unless a part or the whole of it can be cooled and used over and over again. In many plants of recent design this cooling is accomplished by spraying the water through nozzles arranged out of doors in a series of fountains above a shallow basin or reservoir. The temperature interval through which water may be cooled in this way, and the proportion of water lost by evaporation depends of course, on atmospheric conditions. The Schutte-Koerting spray nozzle is to be set up in the courtyard beside the Institute's boiler house and will be tested with water taken from one of the condensers in regular service.

Among the theses by members of this year's graduating class is an investigation of the effect of water vapor in the explosive charge in oil engines. Experiments are now being made by J. A. Willard and H. K. Spencer on a Mietz and Weiss two-cycle engine at the Wrentham pumping station. This engine operates with fuel oil, i.e. the residue left in petroleum distillation

(Continued on page 3.)

ANNUAL BANQUET OF M. E. SOCIETY

Was Held Last Night at the American House—Good Attendance

GOOD TALKS HEARD

W. B. Snow, 1882, I. W. Litchfield, 1885, and Prof. Lanza, Miller and Hayward Speak

The Mechanical Engineering Society held its annual dinner at the American House last night. There was a large gathering, some 80 men being present, and the society is to be congratulated on having had a most successful evening.

Hubbard, the president of the society, was toast-master. He showed a decided ability in this line, and his addresses were marked by many witty sallies. The speakers of the evening were Prof. Lanza, Prof. Hayward, I. W. Litchfield, 1885, Prof. Miller, and Prof. Snow.

Prof. Lanza was the first speaker. He was welcomed by an almost uproarious applause. In his talk he spoke of many interesting facts in regard to the Mechanical Engineering Department. One fact he mentioned was that last year, in spite of the general depression, out of the 61 men graduated from that department, every one was employed by the middle of October. He also spoke of the ever-increasing demand for engineering men in the capacity of salesmen. Perhaps the key-word of his talk was that a scientific education made for honesty, and that honesty meant success.

Prof. Hayward was next introduced. He brought out the advantage to be derived from a professional society, inasmuch as it accustomed every man who took an active interest in it to express himself clearly, and continued by saying that every man, on graduation, ought to have some way of making a good impression, some way of giving a favorable idea of himself to his prospective employer.

I. W. Litchfield, '85, congratulated the society on its progress and success, but urged that the society in future try to get lecturers who would address it on subjects outside of the mechanical engineering department.

Prof. Miller gave a most interesting and instructive talk on expert testimony, interspersed with the relation of many personal experiences. He urged that in all cases the truth was absolutely necessary.

The last speaker was Prof. Snow, who gave a short address on "Publicity Engineering," after which the gathering broke up.

P. M.

MINING THESES

Among the many interesting theses in the Mining Engineering Department, one in particular shows much promise, owing to the fact that three men, L. A. Loomis, H. R. Putnam, and C. P. Webb, have had exceptional opportunity for thesis work this year. They have had the old mine at Milan, near Berlin, N. H., at their disposal. Their work has been divided into three parts, sampling, geological surveying, and concentration.

They spent a large part of last summer at the mine, engaged during a part of the time in actual mining work and during the remainder of the time in taking samples, making both topographical and geological surveys. This term will be devoted to the completion of the analysis of the samples, to the writing of the geological reports and to the concentration tests upon two lots of ores of two different grades which were shipped for this purpose.

lows:—

(Continued on page 3.)

F. H. FAY SPEAKS AT CIVIL DINNER

Talks to Civil Engineering Society on Boylston Street Bridge

NOVEL CONSTRUCTION

City's Gross Neglect Very Costly Final Structure Will Last Two Generations

Over fifty members of the Civil Engineering Society attended the dinner given in the Union last night. L. D. Nisbet, President, acted as toast-master. A meeting was held directly after the dinner; H. I. Pearl was appointed Secretary pro tem. It was announced that the annual banquet of the Society would be held on May 5. Prof. Charles M. Spofford, the newly appointed head of the civil engineering department of the Institute, to speak. The arrangements and completions of details of the banquet are in the hands of the executive committee. After the regular business the speaker of the evening was introduced—Mr. F. H. Fay 1893, Bridge Commissioner of the city of Boston.

Mr. Fay gave a very interesting and instructive talk upon the "History of Construction and Reconstruction of the Boylston Street Bridge," profusely illustrated with lantern slides, showing step by step the process of the work. The original bridge was erected in 1888, a one span structure of Bessemer steel. This being the first time that steel had been used in bridge trusses.

Primarily out of gross neglect in inspecting, painting and protecting the iron and steel work from the engine blasts and gasses collecting under the surface of the floor; the whole structure was rendered worthless to carry the increase in weight of street cars found necessary to introduce on the rail-road systems. The corrosion had gone so far in certain members that their strength was reduced more than seventy per cent.

Professor Spofford was engaged in June 1906 by the Boston Elevated Railway Company to examine and report upon certain bridges across which it was desired to operate heavier cars than those previously used. Computation showed that the Boylston Street bridge was unsafe and reconstruction was absolutely necessary. Prof. Spofford designed the plan for the new work which consisted mainly in building a new bridge within the old one. Many new problems presented themselves and were solved by novel steel bridge construction.

The structure erected by the Boston Elevated Co. is so mounted that it supports only the four surface tracks. The reinforcements by the city support the two roadways and side-walks. In order to do away with further corrosion of gases from engines, which pass under the bridge at the average rate of one a minute, the bottom chords and members were coated with a two inch layer of concrete. This is the first time that anything in this nature has been employed.

The cost of the work to the Elevated Company was over \$46,000 and a sum of \$60,000 was appropriated by the city. The bridge, as it stands today, is a very rigid structure and will allow for considerable increase in the weight of surface cars. By the concrete protection applied, the engineers, who had charge of the construction, estimate that the life of these lower members will be at least two generations.

Clarence C. Knipmeyer, B.S., who since graduating from the electrical engineering department of the University of Michigan with the class of 1907 has been engaged in post-graduate work and teaching at the Institute, has been appointed a member of the faculty of Rose Polytechnic Institute, Terre Haute, Indiana. Mr. Knipmeyer has already begun his new duties at Terre Haute.

JUNIOR CLASS TO HOLD BIG BANQUET

Four Speakers to Address 1910 at First Feed of Season

BEFORE UNION SPEECH

Class Attend Friday Night Entertainment After Its Own Program

With a fine list of speakers and a special entertainment, the annual dinner of the class of 1910 will be held Friday, March 12, 6.20 P. M., at the Union.

After the dinner the class will adjourn to the small room upstairs.

The speakers of the evening will be:—Dr. Dewey, Professor Hayward, Dean Burton, and Bursar Rand. The toastmaster has not been chosen yet.

After the special class program has been run through, the class will attend Union Night in a body. This makes it essential that the dinner be started promptly on time at 6.20 in order to allow the speakers to do justice to the occasion without delaying the regular Friday evening meeting which follows them.

It is hoped that no juniors will miss this event, because it is the first, and probably the only dinner this year. Tickets can be obtained at the cage, from the boys selling The Tech, and from members of the committee. The price is only 75 cents.

In order that the order may be given to the chef in time for him to prepare the dinner properly, the committee requests that all men intending to attend it buy their tickets at once, or before tonight at the latest. It will be impossible to provide for many in excess of the number expected.

TALKS AT WELLESLEY

Member of Technology Corporation Speaks on "Pensions"

Before teachers and students at Wellesley College on Friday evening, March 5, Mr. James Phinney Munroe, member of the corporation of the Massachusetts Institute of Technology, and president of the Massachusetts Reform Club, delivered an address on savings bank life insurance and old age pensions. This was part of the educational propaganda carried on by the Massachusetts Savings Insurance League in behalf of this plan which is now in successful operation in Massachusetts.

Mr. Munroe, quoting the familiar saying that "the curse of the poor is their poverty," expressed surprise that the co-operative plan of buying, which had been so successful in England, had not been introduced on any large scale in this country. Even in endeavoring to make provision for his family or his old age, the poor man, until the recent passing by the Massachusetts legislature of the savings insurance law, had been obliged to pay for insurance a price far higher than that which the man of means must pay.

CALENDAR

WEDNESDAY, MAR. 10.

4.15 P. M. Institute Committee Meeting.

7.25 P. M. Musical Clubs leave for Quincy.

THURSDAY, MAR. 11.

1.00 P. M. T. P. A. Meeting in room A Union.

1912 Class meeting in Huntington Hall.

4.15 P. M. Cosmic Physics.

4.00 (?) Mechanical Engineering Society meeting.

FRIDAY, MAR. 12.

1.00 P. M. 1911 Class Meeting in Huntington Hall.

6.30 P. M. 1910 Class Dinner at the Union.

THE TECH

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Wednesday, March 10, 1909.

The Tech regrets to announce the resignation of Walter Herbert Hildebrand 1911, from the position of Athletic editor. Donald Nichols Frazier 1911, has been elected circulation manager, with the rating of an assistant business manager. Gerald Marcy Keith 1912 has been appointed to the new's staff.

Now that the cigar and candy counters have proved financially successful at the Union, would it not be good policy to install a soda-fountain?

The value of an attractive poster is shown by the striking cards which announce the Junior Dinner. A bit of color on the bulletin boards not only gives a livelier effect but gains a more careful consideration from those whom it concerns.

Is the new chef making good—chicken fricassee and other things? Not yet, but he probably will when he has time. It's up to you Mr. Chef. The argument brought up for the Union at the beginning of the year that the quality of food was higher and the prices lower than the neighboring restaurants is in jeopardy.

Less than half the sophomore class is entitled to vote at the coming Technique Electoral Committee election. Non-payment of dues is, in the largest number of cases, the reason. On the make-up of this committee of twenty-five depends the success of the annual to be brought out next year by 1911. Every member of the class is eligible to election. See that your name is on the list.

The communication following suggests the substitution of the cafeteria or "help yourself" system for the present arrangement in the Union. Although this new scheme might prove speedy and perhaps more economical, there are too many accompanying faults of jamming at the start and of liable inconvenience to the two or three hundred coming in at about the same time, to warrant its substitution.

In running the Union it is not a question of the plan, but of the systematizing of whatever plan is adopted. Those managing any business can not possibly succeed if they allow their pet schemes to use up their energies in lengthy debates. Also, complete organization can not be reached as long as the weekly reports fail to show up any deficit, which may be accumulating and which may assume alarming proportions at the end of the three months.

It is not the plan but how the plan is worked.

COMMUNICATION

Editor-in-Chief of The Tech:
Dear Sir,

Granted that the service of the Union dining-room is not ideal in every particular and that there is much room for betterment, I beg leave to submit the following suggestion to readers of The Tech. Why not substitute the "Cafeteria" style of service in place of the present waiter and lunch counter system?

Under such a system a continuous

counter would extend along one side of the room, on which would be spread out in full view the various edibles. Patrons on entering the room would pick up a tray and pass in single file down an aisle in front of the counter and select that food which appealed to them, being served by attendants stationed behind the counter. At the farther end of the counter would be located a person or persons to review the contents of each tray and pass out checks for the amount purchased. The bearers of the tray would then find seats at the different tables. The cashier would be stationed at the door as at present, receiving payment for the checks as the people leave the room.

According to the report of a downtown restaurant of this type, fifty people can thus be served in five minutes. The adoption of this plan would relieve the congested condition of the room at twelve and one o'clock, by permitting people to be served quickly and without the confusion of waiters passing to and fro. The food is in plain sight on the counters and people may see beforehand what is to be had and thus be much better satisfied. From an economic standpoint the division of labor is much more perfect and the expense of many waiters is materially reduced. The speedy service will, perhaps, be even more greatly appreciated by late-comers to breakfast.

The advantages of such a system are apparent and, I trust, worthy of consideration by students of the Institute.

Very truly yours,

GEORGE T. PALMER 1909.

Whereas, God in His infinite wisdom has taken unto Himself our beloved classmate, George Edward Livingston; and

Whereas, George E. Livingston was held in great esteem by all his classmates and friends in the Massachusetts Institute of Technology; be it

Resolved, That the class of 1911 has lost a sterling member and a loyal comrade; and be it further

Resolved, That the class of 1911 extend its heartfelt sympathies to the bereaved family in their hour of grief; and be it further

Resolved, That a copy of these resolutions be printed in The Tech and in the minutes of the class of 1911.

Signed (For the class)

W. C. Salisbury, T. B. Parker, S. B. Copeland, H. D. Williams, L. C. Cooley, H. M. Davis, D. R. Stevens, S. P. Kimball.

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MECHANICAL ENGINEERS

(Continued from page 1.)

after the naphthas have been removed, which is pumped into the cylinder early in the compression stroke. Previously a considerable volume of steam at slightly more than atmospheric pressure is taken into the cylinder along with air from the crank case and a few drops of cold water injected under pressure, so that the explosive charge is a mixture of oil, water vapor and air. It is a fact that the steam and water contribute in a marked degree toward the satisfactory performance of this type of engine, not only preventing occasional violent explosions due to irregular ignition, but also materially reducing the quantity of fuel required to develop power at a given rate. Just why a greater economy results from feeding a substance like water which hinders rather than aids the combustion (at least while the temperature is rising) is not well understood. It is, however, a matter of considerable interest, for if one may predict from the efforts of gas engine designers today, future developments will probably involve a modification of the usual four-stroke-cycle with explosion at constant volume, in favor of some method by which the rapidity of combustion can be controlled and the maximum pressures lowered. Dilution of the fuel charge with water vapor is one of the simplest means for thus dampening the violence of explosions. In the Mietz and Weiss engine the steam required is generated in a water jacket which forms a sort of boiler enveloping the cylinder. The cylinder also receives cold water through a sight-feed cock, the quantity being only a few drops per revolution.

A change has just been made in the teaching staff of the Mechanical Engineering Department. Mr. Kenneth Moller, who was instructor in the engineering laboratory, has resigned to engage in the design and development of the Fuel Oil engine, a new type of two-cycle oil engine about to be manufactured in Providence. His position has been taken by Mr. E. O. Hiller, formerly with the National Blank Book Co., of Holyoke. Mr. Hiller is well known to Institute men, having been at one time instructor in mechanical engineering drawing.

MINING THESES

(Continued from page 1.)

E. T. Almy, Jr. The Concentration of Ore from the Kerr Lake Mine, Cobalt, Ont. Two grades of ore.

P. H. Black, E. T. Chapman, T. G. Chapman, and C. H. White—The Treatment of an Ore Containing Gold, Silver, and Lead from Nevada, including stamping, amalgamation, concentrating, and cyaniding.

M. S. Clark and R. F. Munoz—The Washing of Coal. Experiments are being made on some of the Penn. coal, and these will be followed by work on some of the low grade coal from Mexico.

A. E. Burt and M. J. Daly—Concentration of Ore from the La Rose Mine, Cobalt, Ont. There are two grades of this material being treated.

L. S. Gordon and G. Miller—Concentration of a Missouri Lead Ore.

N. B. Gregory and P. B. Lord. Geological Work Upon a 12-foot Quartz Vein at Sheldonville, R. I.

V. C. Grubman and G. A. Joslin. Experiment Upon the Use of Litharge in Assaying Sulphide Ores.

F. Jaeger and P. H. Mayer—Work Upon the Constitution of Copper-nickel Sulphides.

Zoomis and Putnam and Webb—Work Upon a Cupriferous Pyrite Ore from Milan, N. H.

F. C. Merriman and H. J. Stiebel—A Study of the Effect of Carbon Upon Copper-nickel Alloys.

R. O. Reed and H. Schaffer—Work Upon Typical Gold Ore from South Africa.

E. N. Loring and W. R. Reilly. Concentration Tests Upon Ore from the Coniagas Mine, Cobalt, Ont.

G. C. Hammond and F. H. Soderstrom—Cyanide Treatment of Gold Ore.

J. K. Tse—An Investigation of the Separation of Quartz and Galena by Willey Table.

C. Y. Wen—The Heat Formation of Some Ferro-calcic Silicates. Continuation of his Undergraduate Thesis.

J. A. Pearce and B. A. Robinson—Geological Study of the Peabody Granite.

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SUBJECTS OF THESES

Naval Architects are Working Along Original Lines

Thesis work in the Naval Architectural Department is progressing rapidly. Three of the six seniors are working on some phase of turbine construction, one is designing a car-float, and the other two are devoted to yacht design.

The work of H. T. Shen is particularly interesting as nothing like it has ever been attempted by the students of this course before, and nothing has been published on the subject as yet. The title is "An investigation of the leakage through labyrinth packing in a steam-turbine." Experiments will be made with the turbine stationary and running. A novel method will be employed to determine the pressure of the steam in the machine, from which the leakage can be calculated. This will be done by inserting a number of thermal-electric couples into the clearance, thus finding the temperature, from which the pressure, and hence the leakage, can be determined.

Other theses are:—
X. R. Smith—Adaptation of Mr. Taylor's experiments to the design of Turbine Propellers.
D. F. Harriman—Design of a 220-foot water-line yacht, driven by Internal Combustion Engines.
A. C. Besselièvre—Design for a steel Car-float.
V. Masjoan—Investigation of the relative strength of different types of longitudinal construction.
K. T. Blood—Calibration of the Denny & Johnson Torsionmeter.

Professor Walter S. Leland, assistant professor of Naval Architecture at the Institute, lectured before the Boston Young Men's Christian Union last Saturday evening. Prof. Leland's subject was "The Building of a Modern Steamship," and was illustrated by many interesting and instructive stereopticon slides.

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The Review aims to develop closer relations among Institute men and to stimulate their interest in the work of the College. It is in no sense an engineering magazine, but deals broadly with the problems of Technological Education and the responsibilities of the professional man.

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NOTICES

WANTED.—Thorp's Outline of Industrial Chemistry. Address R. E. D. Room 55 Pierce.

A PAIR OF SEALSKIN GLOVES have been found and left at the Bursar's office.

TECH PRESS ASSOCIATION.—Meeting at 1 P. M. tomorrow in Room A, Union.

GYM MEET.—Tech vs. Amherst at the Gym Tuesday, Mar. 16. Tech's first intercollegiate meet.

1910 CLASS DINNER.—March 1, 6.30 P. M. at the Union. Tickets 75 cents.

MUSICAL CLUBS.—Concert at Quincy tonight. Train leaves South Station at 7.25. Meet at 7.15.

BIBLE CLASS.—Tomorrow (Thursday) in Union at 6.15 P. M. Meeting of Bible Class, led by Mr. Albert A. Stockdale. Everybody welcome.

HARE AND HOUNDS:—There will be a hare and hound run Saturday at Hyde Park, where the men will have the use of the shower baths and swimming tank. This run will not be postponed for anything short of a blizzard. Coach Kanaly wants to see a large squad out. Stephenson and Billings will lay a short easy trail of about 4 miles. The squad will leave Back Bay station at 2.19 P. M. Round trip fare is 25 cents.

WEIGHT SQUAD:—All candidates for the weight events on the track team will practice regularly on Tuesdays and Thursdays in the lot in front of the Lowell building at 4.15 P. M. Coach Kanaly will be on the spot at this time and place. There are chances for a number of new men in this department. No uniform other than school clothes is necessary.

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